

Abstract of the Disclosure:

*has*  
*AI*

Using a cycling type fuel injection valve, form a concentrated spray area and a thin spray area, adjust the position of those, and conform the spray to the geometric shape of engine and mounting position of the fuel injection valve so as to reduce the fuel consumption and control the unburnt component in exhaust gas. The fuel injection valve is so constructed to form a step on the injection hole opening of the fuel injection valve, to have two or more edge transition portions of the injection hole opening, resulting from the step, and to cause the line connecting the edge transition portions to form an oblique angle against the wall formed by the step perpendicular to the injection hole center axis and the angled wall.

Selection Drawing: Fig. 2